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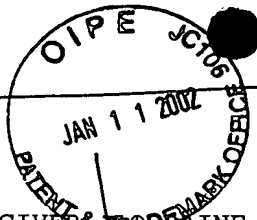
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<110> GIVER, JEREMINE J.
MINSHULL, JEREMY
VOGEL, KURT

<120> NOVEL LIPASE GENES

<130> 02-106820US

<140> 09/905,666

<141> 2001-07-13

<150> 60/217,954

<151> 2000-07-13

<160> 111

<170> PatentIn Ver. 2.1

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 <213> *Bacillus* sp.

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 tctgtctata gctcagccga tttgattgtc gtcaacagcc tttcgcgttt aactggcgca 540
 agaaatgtcc tgatccacgg cgttggccat atcgggtctat taacctcaag ccaagtgaac 600
 gggatatatta aagaaggact gaacggcggg ggcctaaata caaatata 648

<210> 20
 <211> 642
 <212> DNA
 <213> *Bacillus* sp.

<400> 20
 atgaaatttg taaaaagaag gatcattgca cttgtaacaa ttttgatgct gtctgttaca 60
 tcgctgtttg cgttgcaacc gtcagcaaaa gccgctgaac acaatccagt cgttatgggt 120
 cacggtattg gaggggcatc attcaatttt gcgggaatta agagctatct cgatatctcag 180
 ggctggctgc gggacaagct gtatgcagtt gatttcaggg acaagacagg aaataaccgc 240
 aacaatggtc cgcgtctatc taaattcgtc aaagatgtgt tagacaaaac ggggtgcaaa 300
 aaagtagata ttgtggctca tagtatgggc gggcgaaca cgctatacta tattaagaat 360
 ctagatggcg gcgataaaat tgagaacggt gtcacaattg gcggagcaaa cggactcggt 420
 tcaagcagag cattaccagg cacagatcca aatcaaaaaa ttctttacac atccgtctac 480
 aagctcagcc gatctcattg tcgtcaacag tctctctcgt ttaattggct gcaagaaaca 540
 gtccaaatcc atggcgttgg acatatcggg ctattaacct caagccaagt caaaggatat 600
 attaaagaag gactgaacgg cgggggacta aatacaaat aa 642

<210> 21
 <211> 544
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 nucleotide sequence

<400> 21

```
tgaacacaat ccagttgtta tgggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ctcagggctg gtcgcggggc aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcgcggt ttgtgaaaaa 180
ggtattagat gaaacgggtg cgaaaaaagt ggatattgtc gctcacagca tgggcggcgc 240
taacacgctt tactacataa aaaatctgga cggcggaat aaagttgaaa acgtcgtaac 300
gcttggcggc acgaaccgtt cgacgacaag caaggcgctt cggggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttattc 420
aaaatttagac ggtgctaaaa atgttcaaat tcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggggggac tcaatacgaa 540
ttga 544
```

<210> 22
 <211> 544
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 nucleotide sequence

<400> 22

```
tgaacacaat ccagttgtta tgggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ctcagggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatctagat tcgtcaaaga 180
tgtgctagac aaaacgggtg cgaaaaaagt ggatattgtc gctcacagca tggggggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt cgacgacaag caaggcgctt cggggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttattc 420
aaaatttagac ggggctaaaa atgttcaaat tcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggggggac tcaatacgaa 540
ttga 544
```

<210> 23
 <211> 544
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 nucleotide sequence

<400> 23

```
tgaacacaat ccagttgtta tgggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ctcagggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacagg acagggacga attataacaa tggcccggta ttatcacgat ttgtgaaaaa 180
ggtattagat gaaaccgggt cgaaaaaagt ggacattgtc gctcacagca tgggtggcgc 240
```

```

gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacggcag tgccgatatg attgtcatga attacttattc 420
aaaattagac ggtgctaaaa acgttcaa atcatggcgtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggggggac tgaatacaaa 540
ttga

```

<210> 24

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 24

```

tgaacacaat ccagttgtta tgggttcacgg tatcggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ctcaggggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggttttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tggggggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacggcag tgccgatatg attgtcatga attacttattc 420
aaaattagac ggtgctaaaa acgtacaaat tcatggcgtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggggggac tcaatacgaa 540
ttga

```

<210> 25

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 25

```

tgaacacaat ccagttgtta tgggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ctcaggggctg gtcgcggggc aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggttttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tggggcggcgc 240
gaacacactt tactacataa aaaatttggg tggcggtaat aaaattgaaa acgtcgtcac 300
cattggtgga gcaaacggac tcgtttcaag cagagcatta ccaggcacag atccaaatca 360
aaaaattctt tacacatccg tctatagctc agcagatctt attgtcgtea acagtctctc 420
tcgtttaatt ggcgcaagaa acgtccaaat ccatggcgtt ggacatatcg gtctattaac 480
ctcaagccaa gtcaaaggat atattaaaga agggcttaac ggcggggggc acaatacgaa 540
ttga

```

<210> 26

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 26

```

tgaacacaat ccagttgtta tggttcacgg tatcggagga gttcataca attttgcggg 60
aattaagagc tatctcgat ctcagggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtttttagac gaaaccggtg cgaaaaaagt ggatattgtc gtcacagca tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag caggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggtgctaaaa acgtacaaat tcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaaaggat atattaaaga aggactgaac ggcggaggcc taaatacgaa 540
ttga

```

<210> 27

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 27

```

tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca gttttgcggg 60
aattaagagc tatctcgat ctcagggctg gtcacggggc aagctgtatc cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtttttgac gaaacgggtg cgaaaaaagt ggatattgtc gtcacagta tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggtactg atcccaacca 360
aaagatcttg tacacatccg ttacagtag tgctgatatg attgttatga attacttatc 420
aaaattagac ggggctaaaa atgttcaa atcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggggggc taaatacaaaa 540
ttga

```

<210> 28

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 28

```

tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca gttttgcggg 60
aattaagagc tatctcgat ctcagggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtttttgac gaaacgggtg cgaaaaaagt ggatattgtc gtcacagta tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggtactg atcccaacca 360
aaagatcttg tacacatccg ttacagtag tgctgatatg attgttatga attacttatc 420
aaaattagac ggggctaaaa atgttcaa atcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggggggc taaatacaaaa 540

```

ttga

544

<210> 29

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 29

```

tgaacacaat ccagttgtta tggttcacgg tatcggagga gcttcataca gttttgcggg 60
aattaagagc tatctcgtat ctcaggggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggttttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggaacag atcccaacca 360
aaagatcttg tacacatccg tttacagtag tgccgatatg attgtcatga attacttadc 420
aaaattagac ggggctaaaa atgttcaa atcatgggtgc ggacatatcg gccttctgta 480
cagcagccaa gtcaacagcc tgattaaaga aggactgaac ggcggggggc aaaatacaaaa 540
ttga 544

```

<210> 30

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 30

```

tgaacacaat ccagttgtta tggttcacgg tatcggagga gcttcataca gttttgcggg 60
aattaagagc tatctcgtat ctcaggggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggttttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tggggggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggaactg atcccaacca 360
aaagatcttg tacacatccg tttacagtag tgctgatatg attgttatga attacttadc 420
aaaattagac ggggctaaaa atgttcaa atcatggcggtt gggcacactg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggggggc acaatacaaaa 540
ttga 544

```

<210> 31

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 31

```

tgaacacaat ccagttgtta tggttcacgg tattggagga gcatcataca attttgcggg 60

```

```

aattaagagc tatctcgtat ctcagggctg gtcacggggc aagctgtata cggttgattt 120
ttgggacaag acaggcacaac attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtttttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaatcgtc ttgtaacagg caaggcgctt ccgggaacag atcccaatca 360
aaagattttg tacgcacccg tttacagcag tgccgatatg attgtcatga attacttattc 420
aaaattagac ggtgctaaaa acgttcaa atcatggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggggggc tgaatacaaaa 540
ttga 544

```

<210> 32

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 32

```

tgaacacaat ccagtcgtta tggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaggagc tatctcgtat ctcagggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacagg acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtttttagat gaaacgggtg cgaaaaaagt ggacattgtc gtcacagca tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca tttacagcag tgccgatatg attgtcatga attacttattc 420
aaaattagac ggggctaaaa atgttcaaat ccattggcggtt ggacacatcg gccttctgta 480
cagcagccaa gtcaacagcc tgattaaaga aggactgaac ggcggggggc tcaatacgaa 540
ttga 544

```

<210> 33

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 33

```

tgaacacaat ccagttgtta tggttcacgg tatcggaggg gcatcattca attttgcggg 60
aattaggagc tatctcgtat ctcagggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtttttagac gaaacgggtg cgaaaaaagt ggacattgtc gtcacagca tgggtggcgc 240
taacacgctt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc acgaaccgtt tgacgacaag caggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca tttacagcag tgccgatatg attgtcatga attacttattc 420
aaaactagac ggtgctaaaa acgttcaa atcatggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggggggc tcaatacgaa 540
ttga 544

```

<210> 34

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 34

```
tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ctcaggggctg gtcgcgggac aagccgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtttttagac aaaacgggtg cgaaaaaagt ggatattgtc gctcacagca tggggggcg 240
gaacacactt tactacataa aaaatctgga cggcggaat aaagttgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttattc 420
aaaattagac ggtgctaaaa acgttcaaat tcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggag tcaatacgaa 540
ttga 544
```

<210> 35

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 35

```
tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtgt ctcaggggctg gccgcgggac aagctgtatg cagttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtttttagac gaaacgggtg cgaaaaaagt ggatattgtc gctcacagca tgggtggcg 240
gaacacactt tactacataa aaaatctgga cggcggaat aaagttgaaa gcgtcgtaac 300
acttggcggc gcgaatcgtc ttgtaacagg caaggcgctt ccgggaactg atcccaacca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttattc 420
aaaattagac ggtgctaaaa acgttcaaat tcatggcgtc ggacatatcg gccttctgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggcc acaatacaaa 540
ttga 544
```

<210> 36

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 36

```
tgaacacaat ccagttgtta tggttcacgg tatcgagggg gcatcattca gttttgcggg 60
aattaggagc tatctcgtat ctcaggggctg gccgcgggac aagctgtatg cggttgattt 120
ttgggacaag acaggcacia attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtattagat gaaacgggtg cgaaaaaagt ggatattgtc gccacagca tgggtggcg 240
gaacacactt tactacataa aaaatctgga cggcggaat aaagttgaaa acgtcgtgac 300
gcttggcggc gccaacctt tgacgacagg caaggcgctt ccgggtactg atcccaatca 360
```

```

aaagatttta tacacatccg tttacagcag tgccgatatg attgtcatga attacttata 420
aaaattagac ggtgctaaaa acgttcaaat tcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacaggc tgattaaaga aggactgaac ggcggaggcc acaatacaaa 540
ttga 544

```

<210> 37

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 37

```

tgaacacaat ccagttgtta tggttcacgg tatcggaggg gcatcattca gttttgcggg 60
aattaggagc tatctcgat ctcagggctg gccgcgggac aagctgtatg cggttgattt 120
ttgggacaag acaggcacia attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtattagat gaaaccggtg cgaaaaaagt ggatattgtc gcctacagca tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaagttgaaa acgtcgtgac 300
gcttggcggc gccaacggtt tgacgacagg caaggcgctt ccgggtactg atcccaatca 360
aaagatttta tacacatccg tttacagcag tgccgatatg attgtcatga attacttata 420
aaaattagac ggtgctaaaa acgttcaaat tcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacaggc tgattaaaga aggactgaac ggcggaggcc acaatacaaa 540
ttga 544

```

<210> 38

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 38

```

tgaacacaat ccagttgtta tggttcacgg tatcgggggg gcatcattca gttttgcggg 60
aattaggagc tatctcgat ctcagggctg gccgcgggac aagctgtatg cggttgattt 120
ttgggacaag acaggcacia attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtattagat gaaaccggtg cgaaaaaagt ggatattgtc gccacagca tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaagttgaaa acgtcgtgac 300
gcttggcggc gccaacggtt tgacgacagg caaggcgctt ccgggtactg atcccaatca 360
aaagatttta tacacatccg tttacagcag tgccgatatg attgtcatga attacttata 420
aaaattagac ggtgctaaaa acgttcaaat tcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacaggc tgattaaaga aggactgaac ggcggaggcc acaatacaaa 540
ttga 544

```

<210> 39

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 39

```

tgaacacaat ccagttgtta tggttcacgg tatcggaggg gcatcattca gttttgcggg 60
aattaggagc tatctcgtat cccaggggctg gccgcggggac aagctgtatg cggttgattt 120
ttgggacaag acaggcacaa attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtattagat gaaaccggtg cgaaaaaagt ggatattgtc gccacagca tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaaat aaagttgaaa acgtcgtgac 300
gcttggcggc gccaacggtt tgacgacagg caaggcgctt ccgggtactg atcccaatca 360
aaagatttta tacacatccg ttacagcag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggtgctaaaa acgttcaaat tcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacaggc tgattaaaga aggactgaac ggcggaggcc acaatacaaa 540
ttga

```

<210> 40

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 40

```

tgaacacaat ccagttgtta tggttcacgg tattggaggg acatcattca attttgcggg 60
aattaagagc tatctcgtat ctcaggggctg gtcacggggac aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggttttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tgggcggcgc 240
caacacgctt tactacataa aaaatctgga cggcggaaat aaaattgaaa acgtcgtgac 300
gcttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggtgctaaaa acgttcaaat tcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacaggc tgattaaaga aggactgaac ggcggggggcc acaatacaaa 540
ttga

```

<210> 41

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 41

```

tgaacacaat ccagttgtta tggttcacgg tatcggaggg gcatcattca gttttgcggg 60
aattaagagc tatctcgtat ctcaggggctg gtcgcggggac aagctgtatg cagttgattt 120
tagtgacaaa acaggcacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggttttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tggggggcgc 240
gaacacactt tactacataa aaaatctgga tggcggtaat aaaattgaaa acgtcgtaac 300
acttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggtactg atcccaacca 360
aaagatcttg tacacatcca ttacagcag tgccgatatg gttgtcatga attacttatc 420
aaaattagac ggggctaaaa atgttcaaat tcatgggtgc gggcacattg gtttattgat 480
gaacagccaa gtcaacaggc tgattaaaga aggactgaac ggcggggggcc acaatacga 540
ttga

```


<210> 42
 <211> 544
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 nucleotide sequence

<400> 42

```

taaacacaat ccagttgtta tggttcacgg tattggaggg gcatcataca attttgcggg 60
aataaagagc tatctcgtat ctcagggctg gtcgcggggac aagctgtatg cagttgattt 120
tagtgacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggttttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tggggggcgc 240
gaacacactt tactacataa aaaatctgga cggcggtaat aaaattgaaa acgtcgtaac 300
acttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttattc 420
aaaactagac ggtgctaaaa acgttcaa atcatggcgctt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggat taaatacgaa 540
ttga                                         544

```

<210> 43
 <211> 544
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 nucleotide sequence

<400> 43

```

tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgaat ctcagggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacaag accgggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggctttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt tgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttattc 420
aaaattagac ggtgctaaaa acgttcaa ccatggcgctt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcgggggcc agaatacgaa 540
ttga                                         544

```

<210> 44
 <211> 544
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 nucleotide sequence

<400> 44

```

tgaacacaat ccagttgtta tggttcacgg taccggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ctcagggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacagg acagggacga attataacaa tggcccggta ttatcacgat ttgtgaaaaa 180
ggtattagat gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tggggggcgc 240

```

```

gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtcac 300
acttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggtgctaaaa acgttcaa atcatggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga agggctgaac ggcggaggcc agaatacgaa 540
ttga 544

```

```

<210> 45
<211> 544
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: Synthetic
      nucleotide sequence

```

```

<400> 45
tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ctcagggctg gtcgcggggc aagctgtatg cggttgattt 120
ttgggacagg acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggttttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tggggggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtcac 300
acttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggtgctaaaa acgttcaa atcatggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga agggcttaac ggcggggggc acaatacgaa 540
ttga 544

```

```

<210> 46
<211> 544
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: Synthetic
      nucleotide sequence

```

```

<400> 46
tgaacacaat ccagtcgtta tggttcacgg tattggaggg gcatcattca attttgcggg 60
aataaagagc tatctcgtat ctcagggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacagg acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggttttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tgggtggcgc 240
gaacacactt tactacataa agaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attgcttatc 420
aaaattagac ggtgctaaaa acgttcaa atcatggcggtt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggggggc agaatacgaa 540
ttga 544

```

```

<210> 47
<211> 544
<212> DNA
<213> Artificial Sequence

```

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 47

```

tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcgttca attttgcggg 60
aattaagagc tatctcgtat ctcagggctg gtcgcgggac aagctgtatg cagttgattt 120
caaagacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgaaaaa 180
ggtattagat gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tgggcggcgc 240
taacacgctt tactacataa agaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggtactg atcccaacca 360
aaagatcttg tacacatccg tttacagtag tgctgatatg attgttatga attacttattc 420
aaaattagac ggtgctaaaa acgttcaaat tcatggcggt gggcacattg gttttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggaggcc taaatacaaa 540
ttga                                         544

```

<210> 48

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 48

```

tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ctcagggctg gtcgcgggac aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgaaaaa 180
ggtattagat gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tgggtggcgc 240
taacacgctt tactacataa aaaatctgga cggcgcgat aaaattgaga acgtcgtaac 300
acttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatcttg tacacatccg tttacagtag tgctgatatg attgtcatga attacttattc 420
aaaattagac ggtgctaaaa acgttcaaat tcatggcggt gggcacattg gttttattgat 480
gaacagccaa gtcaacagcc tgattaaaga agggctgaac ggcggaggcc agaatacgaa 540
ttga                                         544

```

<210> 49

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 49

```

tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgtat ctcagggctg gtcgcgggac aagctgtatg cagttgattt 120
ttggggcaag acagggacga attataacaa tggcccggta ttatcgcgtt ttgtgaaaaa 180
ggtattagat gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tggggggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
acttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca tttacagcag tgccgatatg attgtcatga attacttattc 420
aaaattagac ggggctaaaa atgttcaaat tcatggcggt gggcacattg gttttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggaggcc aaaatacgaa 540

```

ttga

544

<210> 50

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 50

```

tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgat ctcagggctg gtcacggggc aagctgtatg cagttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcgcggt ttgtgaaaaa 180
ggtattagat gaaacgggtg cgaaaaaagt ggatattgtc gtcacagca tgggcggcgc 240
taacacgctt tactacataa aaaatctgga tggcggtaat aaaattgaaa acgtcgtcac 300
acttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggaactg atcccaacca 360
aaagatttta tacacatcca tttacagcag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggtgctaaaa acgttcaa atcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga aggactgaac ggcggaggcc aaaatacgaa 540
ttga 544

```

<210> 51

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 51

```

tgaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca attttgcggg 60
aattaagagc tatctcgat ctcagggctg gtcacggggc aagctgtatg cggttgattt 120
caaggacaag acaggcaca attataacaa tggcccggta ttatcacgat ttgtgaaaaa 180
ggtattagat gaaaccgggt cgaaaaaagt ggatattgtc gtcacagca tgggcggcgc 240
taacacgctt tactacataa aaaatctgga cggcggaaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggtactg atcccaacca 360
aaagatttta tacacatcca tttacagcag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggtgctaaaa acgttcaa atcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga agggcttaac ggcggggggc agaatacgaa 540
ttga 544

```

<210> 52

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 52

```

taaacacaat ccagttgtta tggttcacgg tattggaggg gcatcattca attttgcggg 60

```

```

aattaagagc tatctcgtat ctcagggctg gtcgcgggac gagctgtatg cggttgattt 120
ttgggacgag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtttttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacacagca tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
gcttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggtacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggtgctaaaa atgttcaa atcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga agggctgaac ggcgagggcc aaaatacgaa 540
ttga 544

```

<210> 53

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 53

```

tgaacacaat ccagttgtta tggttcacgg tatcggaggg gcatcattca attttgccggg 60
aattaagagc tatctcgtat ctcagggctg gtcgcgggac aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtttttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacacagca tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaagttgaaa acgtcgtaac 300
acttggcggc gcgaatcgtt cgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggtgctaaaa acgttcaa atcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga agggctgaac ggcgggggcc aaaatacaaa 540
ttga 544

```

<210> 54

<211> 544

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 54

```

tgaacacaat ccagttgtta tggttcacgg tatcggaggg gcatcattca attttgccggg 60
aattaagagc tatctcgtat ctcagggctg gtcacggggc aagctgtatg cggttgattt 120
ttgggacaag acagggacga attataacaa tggcccggta ttatcacgat ttgtgcaaaa 180
ggtttttagac gaaacgggtg cgaaaaaagt ggatattgtc gtcacacagca tgggtggcgc 240
gaacacactt tactacataa aaaatctgga cggcggaat aaaattgaaa acgtcgtaac 300
acttggcggc gcgaaccgtt cgacgacaag caaggcgctt ccgggaacag atccaaatca 360
aaagatttta tacacatcca ttacagcag tgccgatatg attgtcatga attacttatc 420
aaaattagac ggtgctaaaa atgttcaa atcatggcggt gggcacattg gtttattgat 480
gaacagccaa gtcaacagcc tgattaaaga agggctgaac ggcgaggac aaaatacaaa 540
ttga 544

```

<210> 55

<211> 212

<212> PRT

<213> *Bacillus pumilus*

<400> 55

Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Val
 1 5 10 15

Leu Ser Val Thr Ser Leu Phe Ala Met Gln Pro Ser Ala Lys Ala Ala
 20 25 30

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
 35 40 45

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60

Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 65 70 75 80

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 85 90 95

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110

Asn Thr Pro Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 115 120 125

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 130 135 140

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 145 150 155 160

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 165 170 175

Ala Lys Asn Ala Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 180 185 190

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205

Gln Asn Thr Asn
 210

<210> 56

<211> 212

<212> PRT

<213> *Bacillus subtilis*

<400> 56

Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met
 1 5 10 15

Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
 20 25 30

[illegible]

```
<210> 57
<211> 212
<212> PRT
<213> Bacillus megaterium
```

```

<400> 57
Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Val
  1             5             10             15
Leu Ser Val Thr Ser Leu Phe Ala Met Gln Pro Ser Ala Lys Ala Ala
      20             25             30
Asp Thr Ile Gln Leu Leu Trp Phe Thr Gly Ile Gly Gly Ala Ser Tyr
      35             40             45
Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
      50             55             60
Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
  65             70             75             80

```

[illegible]

```
<210> 58
<211> 212
<212> PRT
<213> Bacillus lentus
```

<400> 58															
Met	Lys	Phe	Val	Lys	Arg	Arg	Ile	Ile	Ala	Leu	Val	Thr	Ile	Leu	Val
1				5					10					15	
Leu	Ser	Val	Thr	Ser	Leu	Phe	Ala	Met	Gln	Pro	Ser	Ala	Lys	Ala	Ala
			20					25					30		
Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Tyr
		35					40					45			
Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg
	50					55					60				
Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr
65					70					75					80
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu
				85					90					95	
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala
			100					105					110		
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu
		115					120					125			

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 130 135 140

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 145 150 155 160

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 165 170 175

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 180 185 190

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205

Leu Asn Thr Asn
 210

<210> 59

<211> 212

<212> PRT

<213> Bacillus circulans

<400> 59

Met Lys Phe Ile Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Val
 1 5 10 15

Leu Ser Val Thr Ser Leu Phe Ala Met Gln Pro Ser Ala Lys Ala Ala
 20 25 30

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
 35 40 45

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60

Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 65 70 75 80

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 85 90 95

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 115 120 125

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 130 135 140

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 145 150 155 160

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 165 170 175

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 180 185 190

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205

Leu Asn Thr Asn
 210

<210> 60

<211> 212

<212> PRT

<213> Bacillus azotoformans

<400> 60

Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Val
 1 5 10 15

Leu Ser Val Thr Ser Leu Phe Ala Met Gln Pro Ser Ala Lys Ala Ala
 20 25 30

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
 35 40 45

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60

Gly Glu Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 65 70 75 80

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 85 90 95

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 115 120 125

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 130 135 140

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 145 150 155 160

Ser Ser Ala Asn Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 165 170 175

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 180 185 190

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205

Leu Asp Thr Asn
 210

<210> 61
 <211> 212
 <212> PRT
 <213> *Bacillus firmus*

<400> 61
 Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Val
 1 5 10 15
 Leu Ser Val Thr Ser Leu Phe Ala Met Gln Pro Ser Ala Lys Ala Ala
 20 25 30
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
 35 40 45
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60
 Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 65 70 75 80
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 85 90 95
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 115 120 125
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 130 135 140
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 145 150 155 160
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 165 170 175
 Ala Lys Asn Ala Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 180 185 190
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205
 His Asn Thr Asn
 210

<210> 62
 <211> 212
 <212> PRT
 <213> *Bacillus badius*

<400> 62

Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Val
 1 5 10 15
 Leu Ser Val Thr Ser Leu Phe Ala Met Gln Pro Ser Ala Lys Ala Ala
 20 25 30
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
 35 40 45
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60
 Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 65 70 75 80
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 85 90 95
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 115 120 125
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 130 135 140
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 145 150 155 160
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 165 170 175
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 180 185 190
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205
 His Asn Thr Asn
 210

<210> 63

<211> 212

<212> PRT

<213> Bacillus sp.

<400> 63

Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met
 1 5 10 15
 Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
 20 25 30
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 35 40 45

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60
 Asp Lys Leu Tyr Ala Val Asp Phe Lys Asp Lys Thr Gly Thr Asn Tyr
 65 70 75 80
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 85 90 95
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Val Glu
 115 120 125
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Gly Lys Ala
 130 135 140
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 145 150 155 160
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Arg Leu Asp Gly
 165 170 175
 Ala Arg Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Tyr
 180 185 190
 Ser Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205
 Leu Asn Thr Asn
 210

<210> 64
 <211> 212
 <212> PRT
 <213> Bacillus sp.

<220>
 <221> MOD_RES
 <222> (73)
 <223> Variable amino acid

<400> 64
 Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met
 1 5 10 15
 Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
 20 25 30
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 35 40 45
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60

Asp Lys Leu Tyr Ala Val Asp Phe Xaa Asp Lys Thr Gly Asn Asn Arg
 65 70 75 80
 Asn Asn Gly Pro Arg Leu Ser Arg Phe Val Lys Asp Val Leu Asp Lys
 85 90 95
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp Lys Ile Glu
 115 120 125
 Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser Ser Arg Ala
 130 135 140
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 145 150 155 160
 Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Arg Leu Ile Gly
 165 170 175
 Ala Arg Asn Ile Leu Ile His Gly Val Gly His Ile Gly Leu Leu Thr
 180 185 190
 Ser Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205
 Leu Asn Thr Asn
 210

<210> 65
 <211> 215
 <212> PRT
 <213> Bacillus sp.

<400> 65
 Met Lys Val Ile Phe Val Lys Lys Arg Ser Leu Gln Ile Leu Val Ala
 1 5 10 15
 Leu Ala Leu Val Leu Gly Ser Ile Ala Phe Ile Gln Pro Lys Glu Ala
 20 25 30
 Lys Ala Ala Glu His Asn Pro Val Val Met Val His Gly Met Gly Gly
 35 40 45
 Ala Ser Tyr Asn Phe Ala Ser Ile Lys Arg Tyr Leu Val Ser Gln Gly
 50 55 60
 Trp Asp Gln Asn Gln Leu Phe Ala Ile Asp Phe Ile Asp Lys Thr Gly
 65 70 75 80
 Asn Asn Leu Asn Asn Gly Pro Arg Leu Ser Arg Phe Val Lys Asp Val
 85 90 95
 Leu Ala Lys Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met
 100 105 110

Gly Gly Ala Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp
 115 120 125
 Lys Ile Glu Asn Val Val Thr Leu Gly Gly Ala Asn Gly Leu Val Ser
 130 135 140
 Leu Arg Ala Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr
 145 150 155 160
 Ser Val Tyr Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Arg
 165 170 175
 Leu Ile Gly Ala Arg Asn Val Leu Ile His Gly Val Gly His Ile Gly
 180 185 190
 Leu Leu Thr Ser Ser Gln Val Lys Gly Tyr Val Lys Glu Gly Leu Asn
 195 200 205
 Gly Gly Gly Gln Asn Thr Asn
 210 215

<210> 66
 <211> 215
 <212> PRT
 <213> Bacillus sp.

<400> 66
 Met Lys Val Ile Phe Val Lys Lys Arg Ser Leu Gln Ile Leu Val Val
 1 5 10 15
 Leu Ala Leu Val Met Gly Ser Met Ala Phe Ile Gln Pro Lys Glu Ile
 20 25 30
 Arg Ala Ala Glu His Asn Pro Val Val Met Val His Gly Met Gly Gly
 35 40 45
 Ala Ser Tyr Asn Phe Ala Ser Ile Lys Ser Tyr Leu Val Ser Gln Gly
 50 55 60
 Trp Asp Arg Asn Gln Leu Phe Ala Ile Asp Phe Ile Asp Lys Thr Gly
 65 70 75 80
 Asn Asn Arg Asn Asn Gly Pro Arg Leu Ser Arg Phe Val Lys Asp Val
 85 90 95
 Leu Ala Lys Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met
 100 105 110
 Gly Gly Ala Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp
 115 120 125
 Lys Ile Glu Asn Val Val Thr Leu Gly Gly Ala Asn Gly Leu Val Ser
 130 135 140
 Leu Arg Ala Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr
 145 150 155 160

Ser Val Tyr Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Arg
 165 170 175

Leu Ile Gly Ala Arg Asn Val Leu Ile His Gly Val Gly His Ile Gly
 180 185 190

Leu Leu Ala Ser Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn
 195 200 205

Gly Gly Gly Gln Asn Thr Asn
 210 215

<210> 67
 <211> 215
 <212> PRT
 <213> Bacillus sp.

<400> 67
 Met Lys Val Ile Phe Val Lys Lys Arg Ser Leu Gln Ile Leu Ile Ala
 1 5 10 15

Leu Ala Leu Val Ile Gly Ser Met Ala Phe Ile Gln Pro Lys Glu Ala
 20 25 30

Lys Ala Ala Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly
 35 40 45

Ala Ser Tyr Asn Phe Phe Ser Ile Lys Ser Tyr Leu Ala Thr Gln Gly
 50 55 60

Trp Asp Arg Asn Gln Leu Tyr Ala Ile Asp Phe Ile Asp Lys Thr Gly
 65 70 75 80

Asn Asn Arg Asn Asn Gly Pro Arg Leu Ser Arg Phe Val Lys Asp Val
 85 90 95

Leu Asp Lys Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met
 100 105 110

Gly Gly Ala Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp
 115 120 125

Lys Ile Glu Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser
 130 135 140

Ser Arg Ala Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr
 145 150 155 160

Ser Val Tyr Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Gln
 165 170 175

Phe Asn Trp Arg Lys Lys His Pro Asp Pro Gly Val Gly His Ile Gly
 180 185 190

Leu Leu Thr Ser Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn
 195 200 205

Gly Gly Gly Leu Asn Thr Asn
210 215

<210> 68
<211> 212
<212> PRT
<213> Bacillus sp.

<400> 68
Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met
1 5 10 15
Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
20 25 30
Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
35 40 45
Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
50 55 60
Asp Lys Leu Tyr Ala Val Asp Phe Arg Asp Lys Thr Gly Asn Asn Leu
65 70 75 80
Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu
85 90 95
Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
100 105 110
Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
115 120 125
Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Val Thr Gly Lys Ala
130 135 140
Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
145 150 155 160
Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Thr Lys Leu Asp Gly
165 170 175
Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Tyr
180 185 190
Ser Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
195 200 205
Leu Asn Thr Asn
210

<210> 69
<211> 212
<212> PRT
<213> Bacillus sp.

<400> 69

Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met
 1 5 10 15

Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
 20 25 30

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 35 40 45

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60

Asp Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Asn Asn Leu
 65 70 75 80

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu
 85 90 95

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 115 120 125

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Val Thr Gly Lys Ala
 130 135 140

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 145 150 155 160

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 165 170 175

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Tyr
 180 185 190

Ser Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205

Leu Asn Thr Asn
 210

<210> 70

<211> 212

<212> PRT

<213> Bacillus sp.

<400> 70

Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met
 1 5 10 15

Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
 20 25 30

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 35 40 45

Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg
50						55				60					
Asp	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Ser	Asp	Lys	Thr	Gly	Asn	Asn	Leu
65				70						75				80	
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Lys	Lys	Val	Leu	Asp	Glu
				85				90						95	
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala
		100						105				110			
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu
		115				120						125			
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Leu	Val	Thr	Gly	Lys	Ala
130						135				140					
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Val	Tyr
145				150						155				160	
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly
				165				170						175	
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Tyr
		180						185				190			
Ser	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly
		195				200						205			
Leu	Asn	Thr	Asn												
210															

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<210> 71
<211> 212
<212> PRT
<213> Bacillus sp.
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<400> 71
Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met
  1             5             10             15

Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
      20             25             30

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
      35             40             45

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
      50             55             60

Asp Lys Leu Tyr Ala Val Asp Phe Lys Asp Lys Thr Gly Asn Asn Arg
  65             70             75             80

Asn Asn Gly Pro Arg Leu Ser Arg Phe Val Lys Asp Val Leu Asp Lys
      85             90             95

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Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp Lys Ile Glu
 115 120 125
 Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser Ser Arg Ala
 130 135 140
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 145 150 155 160
 Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Arg Leu Ile Gly
 165 170 175
 Ala Arg Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Thr
 180 185 190
 Ser Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn Gly Gly Gly
 195 200 205
 Leu Asn Thr Asn
 210

<210> 72
 <211> 212
 <212> PRT
 <213> Bacillus sp.

<400> 72

Met Lys Phe Val Lys Arg Arg Ile Leu Ala Leu Val Thr Ile Leu Met
 1 5 10 15
 Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
 20 25 30
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 35 40 45
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60
 Asp Lys Leu Tyr Ala Val Asp Phe Ile Asp Lys Thr Gly Asn Asn Arg
 65 70 75 80
 Asn Asn Gly Pro Arg Leu Ser Arg Phe Val Lys Asp Val Leu Asp Lys
 85 90 95
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp Lys Ile Glu
 115 120 125
 Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser Ser Arg Ala
 130 135 140

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
145 150 155 160

Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Arg Leu Ile Gly
165 170 175

Ala Arg Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Thr
180 185 190

Ser Ser Leu Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn Gly Gly Gly
195 200 205

Gln Asn Thr Asn
210

<210> 73

<211> 215

<212> PRT

<213> Bacillus sp.

<400> 73

Met Lys Val Ile Phe Val Lys Lys Arg Ser Leu Gln Ile Leu Val Ala
1 5 10 15

Leu Ala Leu Val Ile Gly Ser Met Ala Phe Ile Gln Pro Lys Glu Ile
20 25 30

Lys Ala Ala Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly
35 40 45

Ala Ser Tyr Asn Phe Ala Ser Ile Lys Ser Tyr Leu Val Asn Gln Gly
50 55 60

Trp Asp Arg Asn Gln Leu Phe Ala Ile Asp Phe Ile Asp Lys Thr Gly
65 70 75 80

Asn Asn Arg Asn Asn Gly Pro Arg Leu Ser Arg Phe Val Lys Asp Val
85 90 95

Leu Asp Lys Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met
100 105 110

Gly Gly Ala Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp
115 120 125

Lys Ile Glu Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser
130 135 140

Leu Arg Ala Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr
145 150 155 160

Ser Val Tyr Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Arg
165 170 175

Leu Thr Gly Ala Arg Asn Val Leu Ile His Gly Val Gly His Ile Gly
180 185 190

Leu Leu Thr Ser Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn
 195 200 205

Gly Gly Gly Leu Asn Thr Asn
 210 215

<210> 74

<211> 213

<212> PRT

<213> Bacillus sp.

<400> 74

Met Lys Phe Val Lys Arg Arg Ile Ile Ala Leu Val Thr Ile Leu Met
 1 5 10 15

Leu Ser Val Thr Ser Leu Phe Ala Leu Gln Pro Ser Ala Lys Ala Ala
 20 25 30

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 35 40 45

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 50 55 60

Asp Lys Leu Tyr Ala Val Asp Phe Arg Asp Lys Thr Gly Asn Asn Arg
 65 70 75 80

Asn Asn Gly Pro Arg Leu Ser Lys Phe Val Lys Asp Val Leu Asp Lys
 85 90 95

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 100 105 110

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp Lys Ile Glu
 115 120 125

Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser Ser Arg Ala
 130 135 140

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 145 150 155 160

Lys Leu Ser Arg Ser His Cys Arg Gln Gln Ser Leu Ser Phe Asn Trp
 165 170 175

Leu Gln Glu Thr Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu
 180 185 190

Thr Ser Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn Gly Gly
 195 200 205

Gly Leu Asn Thr Asn
 210

<210> 75
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 75

Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Ala	Ser	Phe	1	5	10	15
Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg	20	25	30	
Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr	35	40	45	
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Lys	Lys	Val	Leu	Asp	Glu	50	55	60	
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala	65	70	75	80
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Val	Glu	85	90	95	
Asn	Val	Val	Thr	Leu	Gly	Gly	Thr	Asn	Arg	Ser	Thr	Thr	Ser	Lys	Ala	100	105	110	
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Ile	Tyr	115	120	125	
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly	130	135	140	
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met	145	150	155	160
Asn	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly	165	170	175	
Leu	Asn	Thr	Asn													180			

<210> 76
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 76

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30

Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Asp Val Leu Asp Lys
 50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

Leu Asn Thr Asn
 180

<210> 77

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 77

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30

Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Arg Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Gly Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 Leu Asn Thr Asn
 180

<210> 78

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 78

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125

Gly Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

Leu Asn Thr Asn
 180

<210> 79

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 79

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30

Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95

Asn Val Val Thr Ile Gly Gly Ala Asn Gly Leu Val Ser Ser Arg Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 115 120 125

Ser Ser Ala Asp Leu Ile Val Val Asn Ser Leu Ser Arg Leu Ile Gly
 130 135 140

Ala Arg Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Thr
 145 150 155 160

Ser Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

His Asn Thr Asn
 180

<210> 80

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 80

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
 1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30

Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Arg Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Lys Gly Tyr Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

Leu Asn Thr Asn
 180

<210> 81

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 81

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Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1              5              10              15

Ser Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
              20              25              30

Gly Lys Leu Tyr Pro Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
              35              40              45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50              55              60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65              70              75              80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
              85              90              95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
              100              105              110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
              115              120              125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
              130              135              140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
145              150              155              160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
              165              170              175

Leu Asn Thr Asn
              180

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<210> 82

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 82

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Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1              5              10              15

Ser Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
              20              25              30

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Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr	
		35							40							
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu	
		50							55							
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala	
		65							70							
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu	
								85								
								90								
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Leu	Thr	Thr	Ser	Lys	Ala	
								100								
								105								
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Val	Tyr	
								115								
								120								
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly	
								130								
								135								
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met	
								145								
								150								
Asn	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly	
								165								
								170								
								175								
Leu	Asn	Thr	Asn													
								180								

<210> 83

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 83

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
 1 5 10 15

Ser Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
20 25 30

Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Tyr
 145 150 155 160
 Ser Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 Gln Asn Thr Asn
 180

<210> 84

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 84

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
 1 5 10 15
 Ser Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Thr Gly Leu Leu Met
145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
165 170 175

His Asn Thr Asn
180

<210> 85

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 85

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
20 25 30

Gly Lys Leu Tyr Thr Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Val Thr Gly Lys Ala
100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Ala Ser Val Tyr
115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
165 170 175

Leu Asn Thr Asn
180

<210> 86
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 86

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Asn Phe Ala Gly Ile Arg Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30

Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Arg Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Tyr
 145 150 155 160

Ser Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

Leu Asn Thr Asn
 180

<210> 87
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 87

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Arg Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Thr Asn Arg Leu Thr Thr Ser Arg Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 Leu Asn Thr Asn
 180

<210> 88

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 88

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Asp Lys Pro Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Lys
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Val Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 Leu Asn Thr Asn
 180

<210> 89

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 89

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Pro Arg
 20 25 30
 Asp Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Val Glu
 85 90 95
 Ser Val Val Thr Leu Gly Gly Ala Asn Arg Leu Val Thr Gly Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

His Asn Thr Asn
 180

<210> 90

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 90

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Ser Phe Ala Gly Ile Arg Ser Tyr Leu Val Ser Gln Gly Trp Pro Arg
 20 25 30

Asp Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Val Glu
 85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Gly Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Arg Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

His Asn Thr Asn
 180

<210> 91

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 91

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Ser Phe Ala Gly Ile Arg Ser Tyr Leu Val Ser Gln Gly Trp Pro Arg
 20 25 30

Asp Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala Tyr Ser Met Gly Gly Ala
 65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Val Glu
 85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Gly Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Arg Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

His Asn Thr Asn
 180

<210> 92

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 92

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Ser Phe Ala Gly Ile Arg Ser Tyr Leu Val Ser Gln Gly Trp Pro Arg
 20 25 30

Asp Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Val Gly
 85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Gly Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Arg Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

His Asn Thr Asn
 180

<210> 93

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 93

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Ser Phe Ala Gly Ile Arg Ser Tyr Leu Val Ser Gln Gly Trp Pro Arg
 20 25 30

[illegible]

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<210> 94
<211> 180
<212> PRT
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 94															
Glu	His	Asn	Pro	Val	Val	Met	Val	His	Gly	Ile	Gly	Gly	Thr	Ser	Phe
1				5					10					15	
Asn	Phe	Ala	Gly	Ile	Lys	Ser	Tyr	Leu	Val	Ser	Gln	Gly	Trp	Ser	Arg
			20					25					30		
Asp	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr
		35					40					45			
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Gln	Lys	Val	Leu	Asp	Glu
	50					55					60				
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala
65					70					75					80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 His Asn Thr Asn
 180

<210> 95
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 95
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Ser Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Asp Lys Leu Tyr Ala Val Asp Phe Ser Asp Lys Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Val Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
165 170 175

His Asn Thr Asn
180

<210> 96

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 96

Lys His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Tyr
1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
20 25 30

Asp Lys Leu Tyr Ala Val Asp Phe Ser Asp Lys Thr Gly Thr Asn Tyr
35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
165 170 175

Leu Asn Thr Asn
180

<210> 97
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 97
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Glu Ser Gln Gly Trp Ser Arg
 20 25 30
 Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Ala Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Leu Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 Gln Asn Thr Asn
 180

<210> 98
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 98

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30

Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Arg Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu
 50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

Gln Asn Thr Asn
 180

<210> 99

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 99

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30

Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Arg Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 His Asn Thr Asn
 180

<210> 100

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 100

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Arg Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Cys Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

Gln Asn Thr Asn
 180

<210> 101

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 101

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30

Asp Lys Leu Tyr Ala Val Asp Phe Lys Asp Lys Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu
 50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

Leu Asn Thr Asn
 180

<210> 102

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 102

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30

Asp Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu
 50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asp Lys Ile Glu
 85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Val Tyr
 115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175

Gln Asn Thr Asn
 180

<210> 103

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 103

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Asp Lys Leu Tyr Ala Val Asp Phe Trp Gly Lys Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 Gln Asn Thr Asn
 180

<210> 104

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 104

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30

Gly	Lys	Leu	Tyr	Ala	Val	Asp	Phe	Trp	Asp	Lys	Thr	Gly	Thr	Asn	Tyr	
		35					40					45				
Asn	Asn	Gly	Pro	Val	Leu	Ser	Arg	Phe	Val	Lys	Lys	Val	Leu	Asp	Glu	
50						55					60					
Thr	Gly	Ala	Lys	Lys	Val	Asp	Ile	Val	Ala	His	Ser	Met	Gly	Gly	Ala	
65					70					75						80
Asn	Thr	Leu	Tyr	Tyr	Ile	Lys	Asn	Leu	Asp	Gly	Gly	Asn	Lys	Ile	Glu	
				85					90							95
Asn	Val	Val	Thr	Leu	Gly	Gly	Ala	Asn	Arg	Ser	Thr	Thr	Ser	Lys	Ala	
		100						105					110			
Leu	Pro	Gly	Thr	Asp	Pro	Asn	Gln	Lys	Ile	Leu	Tyr	Thr	Ser	Ile	Tyr	
		115					120					125				
Ser	Ser	Ala	Asp	Met	Ile	Val	Met	Asn	Tyr	Leu	Ser	Lys	Leu	Asp	Gly	
130						135					140					
Ala	Lys	Asn	Val	Gln	Ile	His	Gly	Val	Gly	His	Ile	Gly	Leu	Leu	Met	
145					150					155						160
Asn	Ser	Gln	Val	Asn	Ser	Leu	Ile	Lys	Glu	Gly	Leu	Asn	Gly	Gly	Gly	
				165					170					175		
Gln	Asn	Thr	Asn													
180																

<210> 105

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 105

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
20 25 30

Gly Lys Leu Tyr Ala Val Asp Phe Lys Asp Lys Thr Gly Thr Asn Tyr
35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Lys Lys Val Leu Asp Glu
50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 Gln Asn Thr Asn
 180

<210> 106

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 106

Lys His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Asp Glu Leu Tyr Ala Val Asp Phe Trp Asp Glu Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
165 170 175

Gln Asn Thr Asn
180

<210> 107

<211> 180

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 107

Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
1 5 10 15

Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
20 25 30

Asp Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
35 40 45

Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
50 55 60

Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
65 70 75 80

Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Val Glu
85 90 95

Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
100 105 110

Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
115 120 125

Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
130 135 140

Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
145 150 155 160

Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
165 170 175

Gln Asn Thr Asn
180

<210> 108
 <211> 180
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 108
 Glu His Asn Pro Val Val Met Val His Gly Ile Gly Gly Ala Ser Phe
 1 5 10 15
 Asn Phe Ala Gly Ile Lys Ser Tyr Leu Val Ser Gln Gly Trp Ser Arg
 20 25 30
 Gly Lys Leu Tyr Ala Val Asp Phe Trp Asp Lys Thr Gly Thr Asn Tyr
 35 40 45
 Asn Asn Gly Pro Val Leu Ser Arg Phe Val Gln Lys Val Leu Asp Glu
 50 55 60
 Thr Gly Ala Lys Lys Val Asp Ile Val Ala His Ser Met Gly Gly Ala
 65 70 75 80
 Asn Thr Leu Tyr Tyr Ile Lys Asn Leu Asp Gly Gly Asn Lys Ile Glu
 85 90 95
 Asn Val Val Thr Leu Gly Gly Ala Asn Arg Ser Thr Thr Ser Lys Ala
 100 105 110
 Leu Pro Gly Thr Asp Pro Asn Gln Lys Ile Leu Tyr Thr Ser Ile Tyr
 115 120 125
 Ser Ser Ala Asp Met Ile Val Met Asn Tyr Leu Ser Lys Leu Asp Gly
 130 135 140
 Ala Lys Asn Val Gln Ile His Gly Val Gly His Ile Gly Leu Leu Met
 145 150 155 160
 Asn Ser Gln Val Asn Ser Leu Ile Lys Glu Gly Leu Asn Gly Gly Gly
 165 170 175
 Gln Asn Thr Asn
 180

<210> 109
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

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 cnt

<400> 109

Asp His Asn Pro Val Ile Met Val His Gly Met Gly Gly Ala Ser Tyr
 1 5 10 15

Asn Phe Ala Gly
 20

<210> 110

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 110

Asp His Gln Pro Val Val Val Val His Gly Ile Gly Gly Ser Ser Phe
 1 5 10 15

Asn Phe Ser Gly
 20

<210> 111

<211> 15

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 111

gagcataacc ccgtg

15